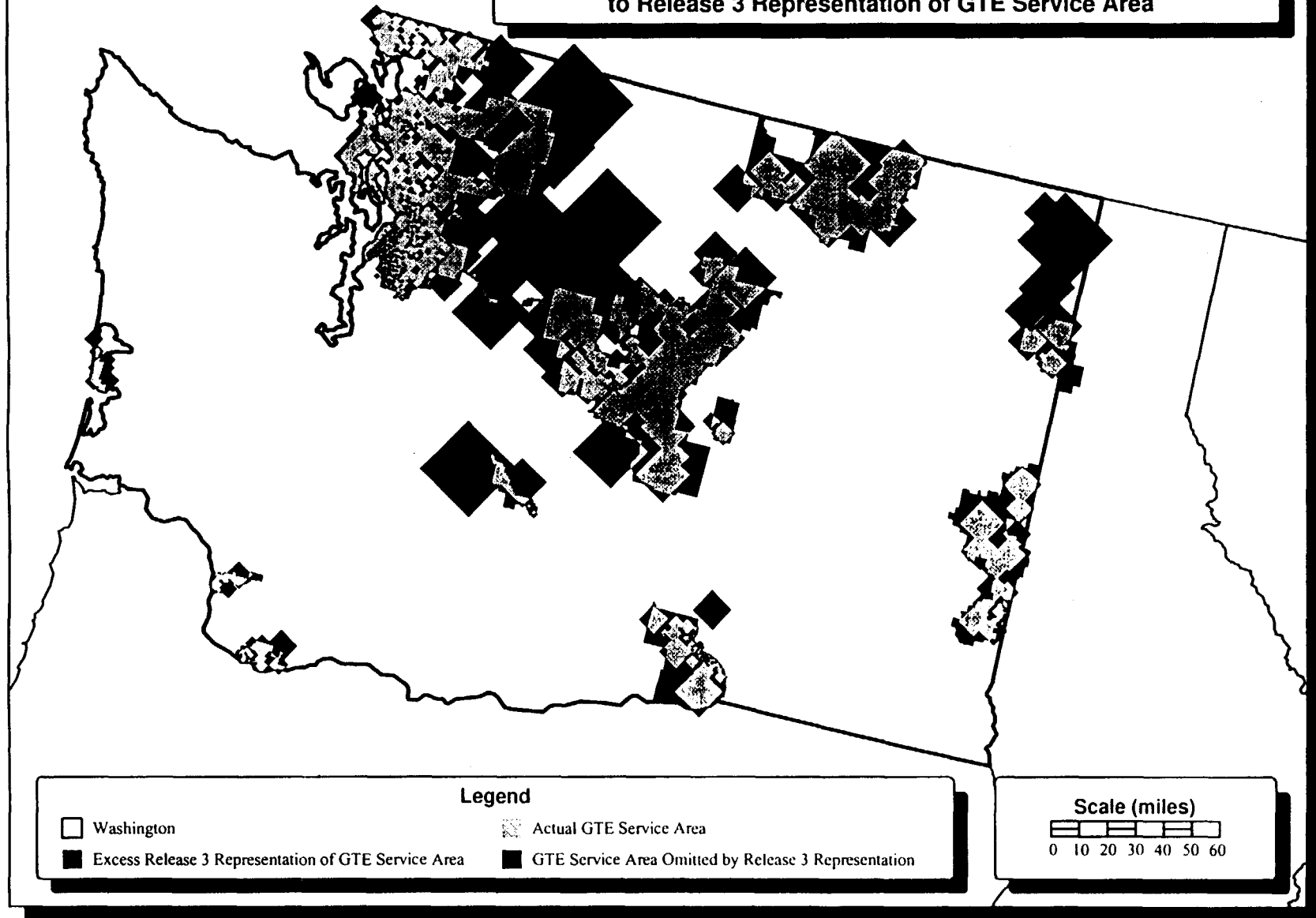


APPENDIX H

Comparison of Actual GTE Service Area in Washington to Release 3 Representation of GTE Service Area



Appendix I

The input changes are:

<u>Switch real-time limit, BHCA</u>	<u>Default</u>	<u>20% Decrease</u>	<u>50% Decrease</u>	<u>90% Decrease</u>
1-1,000	10,000	8,000	5,000	1,000
1,000-10,000	50,000	40,000	25,000	5,000
10,000-40,000	20,000	160,000	100,000	20,000
40,000 +	600,000	480,000	300,000	60,000

The Results are :

Results for all scenarios except 90% decrease are:

	<u>Annual Cost</u>	<u>Units</u>	<u>Unit Cost</u>
End Office Switching	\$22,574,200		
Port	\$6,772,260	726,227 Lines	0.78 per line / month
Usage	15,801,940	9,552,246,145 min.	\$0.0017 per min.

EO Switching Investment	<u>Total</u>
end office switching	\$61,556,956

Results for the 90% decrease scenario are:

Results for all scenarios except 90% decrease are:

	<u>Annual Cost</u>	<u>Units</u>	<u>Unit Cost</u>
End Office Switching	\$29,413,351		
Port	\$8,824,005	726,227 Lines	1.01 per line / month
Usage	20,589,346	9,552,246,145 min.	\$0.0022 per min.

EO Switching Investment	<u>Total</u>
end office switching	\$70,753,969

When real time BHCA are reduced by 90% the model yields only a marginal increase in switching costs.

Percent Change from default results for the 90% decrease scenario are:

	<u>Annual Cost</u>	<u>Units</u>	<u>Unit Cost</u>
End Office Switching	30.3%		
Port	30.3%	726,227 Lines	29.5% per line / month
Usage	30.3%	9,552,246,145 min.	29.4% per min.
EO Switching Investment	<u>Total</u>		
end office switching			

ATTACHMENT C

	(2) POLES OWNED BY GTE AND JOINTLY USED	(3) POLES PARTIALLY OWNED BY GTE	(4) POLES OWNED BY POWER COMPANY AND JOINTLY USED	(8) PERCENTAGE OF JOINTLY USED POLES SOLELY OR PARTIALLY OWNED BY GTE	(9) PERCENTAGE OF JOINTLY USED POLES OWNED BY POWER UTILITY
ALL GTE REGIONS	467,188	578,376	3,032,640	25.6379%	74.3621%

To calculate the fraction of jointly used poles owned wholly or partly by GTE (the result is expressed as a percentage)

$$\frac{(\text{Col. 2} + \text{Col. 3})}{(\text{Col. 2} + \text{Col. 3} + \text{Col. 4})}$$

To calculate the fraction of jointly used poles owned by the power utility:

$$100\% - (\text{Column 8})$$

ATTACHMENT D

Comparison of Asset Lives Used for Depreciation Purposes

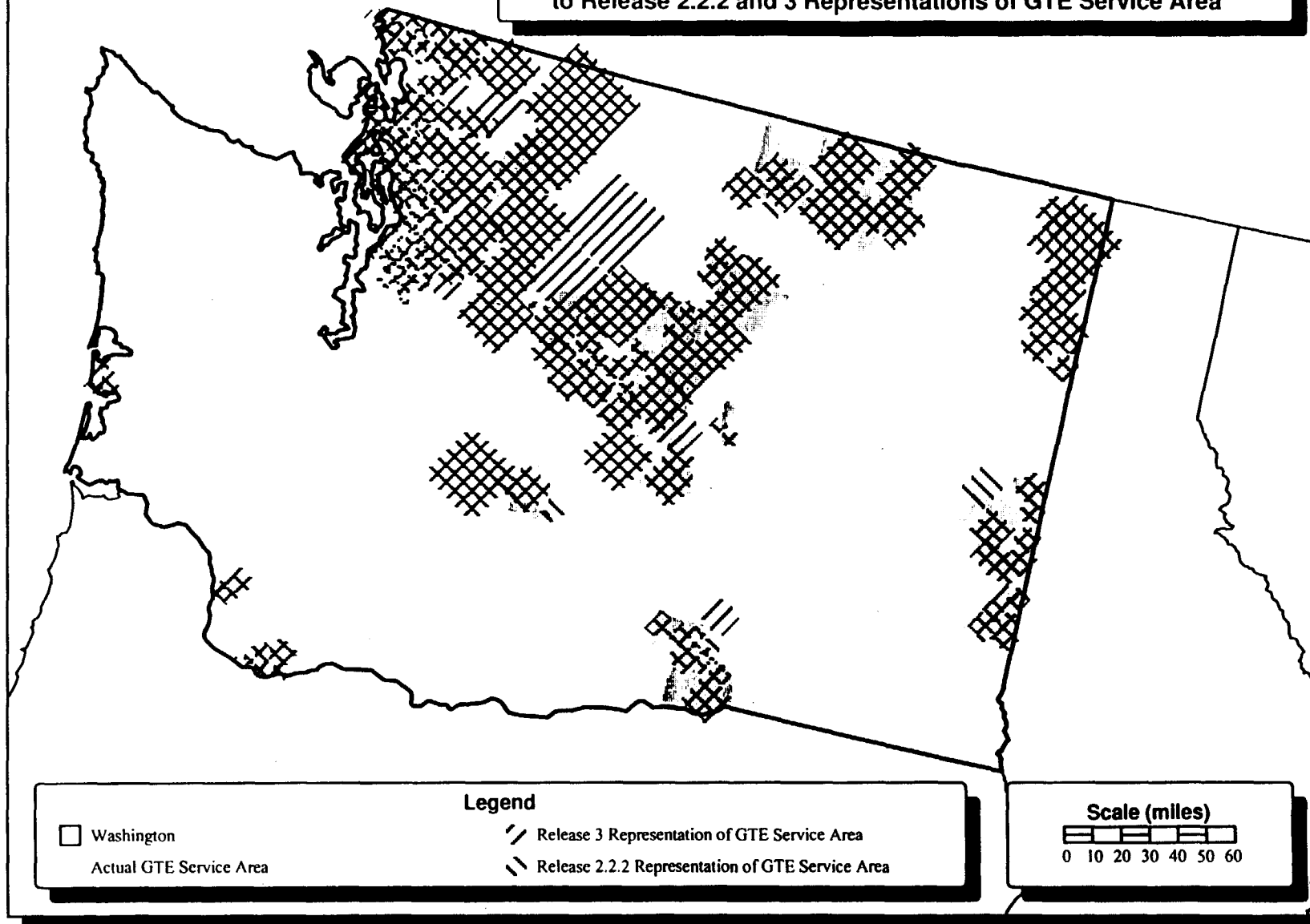
	BCPM	Hatfield 3	GTE	TFI
Depreciation Classes	Lives	Lives	Economic Lives	Economic Life Range
Land	00.00	00.00	0	
Motor Vehicle	06.19	09.16	8	
S P Vehicle	10.04		8	
Garage Work	12.10	11.47	10	
Other Work	13.81	13.22	10	
Building	42.61	48.99	30	
Furniture	16.09	16.56	10	
Office Support	11.08	11.25	10	
G P Computers	05.39	06.24	5	
Switching	09.80	16.54	10	9 - 11
Circuit/DLC	08.46	10.09	8	6 - 9
Pole	30.05	16.13	25	
Aerial Copper	12.49	16.80	15	14 - 16
Aerial Fiber	18.92	22.11	20	15 - 20
Underground Copper	11.37	21.17	15	14 - 16
Underground Fiber	18.94	22.87	20	15 - 20
Buried Copper	14.10	19.86	15	14 - 16
Buried Fiber	18.94	24.13	20	15 - 20
Conduit	50.00	51.35	40	

ATTACHMENT E

USOA Account	Common Costs Categories
	I. CORPORATE OPERATIONS COSTS
671X	Executive and Planning
6711	Executive
6712	Planning
672X	General and Administrative
6721	Accounting and Finance
6722	External Relations
6723	Human Resources
6724	Information Management
6725	Legal
6726	Procurement
6727	Research and Development
6728	Other G & A
	II. OTHER COMMON COSTS
21XX	General Support Costs
2112	Motor Vehicle
2114	Special Purpose Vehicle
2115	Garage Work Equipment
2116	Other Work Equipment
2121	Building + Land
2122	Furniture
2123	Office Support Equipment
2123	Company Communications Equipment
2124	General Purpose Computers
	Plant Specific Operations
611X	Network Support Expenses
6112	Motor Vehicle Expense
6115	Garage Work Equipment Expense
6116	Other Work Equipment
612X	General Support Expenses
6122	Furniture
6123	Office Equipment
6124	General Purpose Computers
	Plant Non-Specific Operations
6512	Provisioning Expense
653X	Network Operations Expenses
6532	Network Administration
6533	Testing
6534	Plant Operations Administration
6535	Engineering






ATTACHMENT F

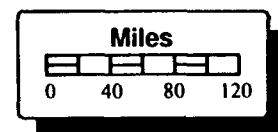
Comparison of Actual GTE Service Area in Washington
to Release 2.2.2 and 3 Representations of GTE Service Area



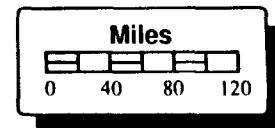
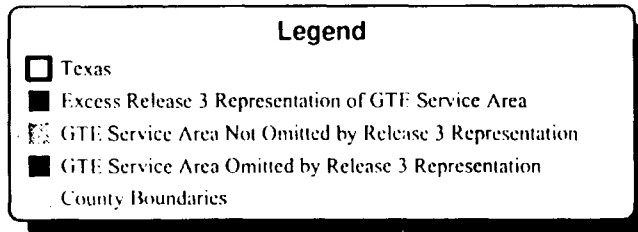
**Comparison of Actual GTE Service Area in Texas
to Release 3 and 2.2.2 Representations of GTE Service Area**

Legend

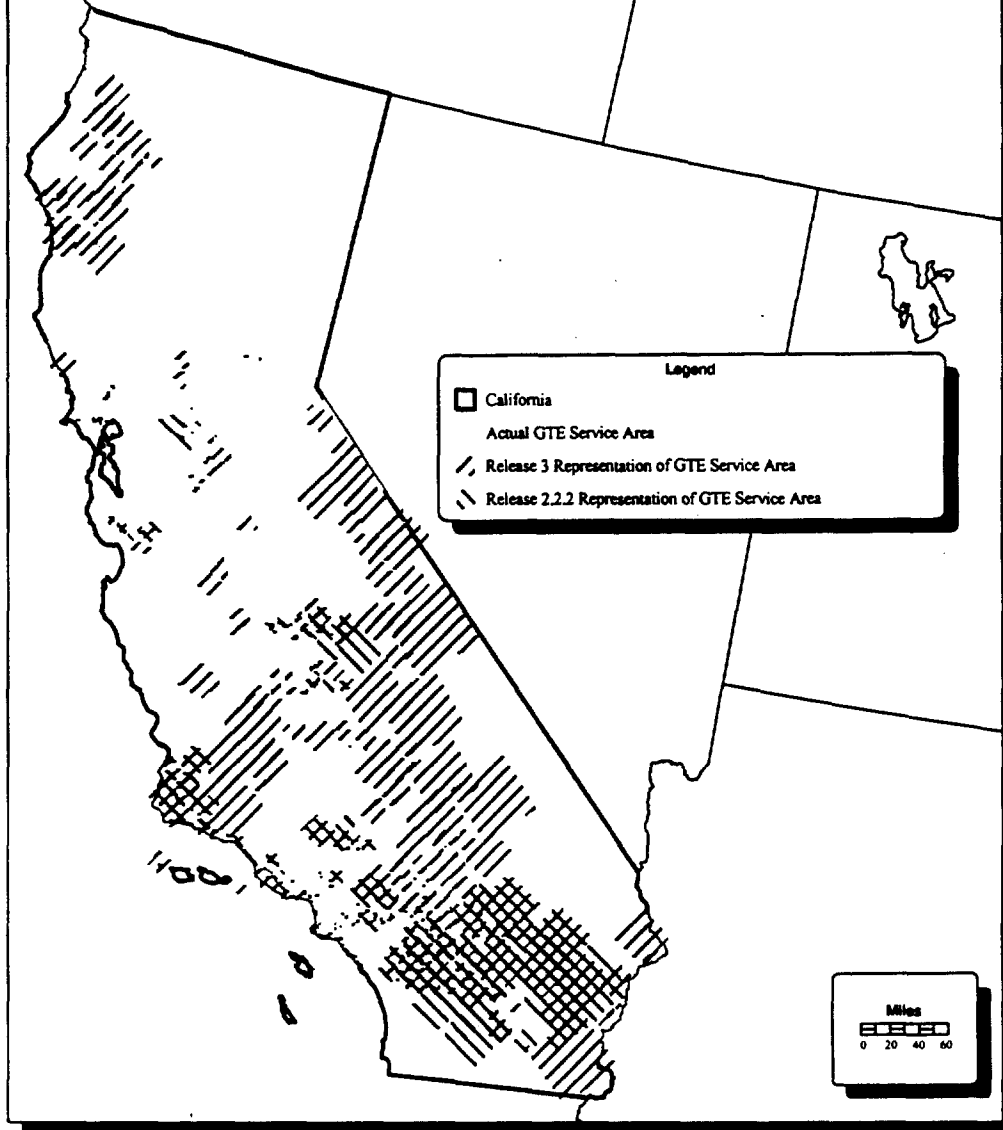
-  Texas
-  Actual GTE Service Area
-  Release 3 Representation of GTE Service Area
-  Release 2.2.2 Representation of GTE Service Area
-  County Boundaries



**Comparison of Actual GTE Service Area in Texas
to Release 3 Representation of GTE Service Area**



**Comparison of Actual GTE Service Area in California
to Release 3 and 2.2.2 Representations of GTE Service Area**



Privileged and Confidential
Prepared at the Request of Counsel

Preliminary Draft:
Not Data Managed

Alan F. Ciamporero
Vice President

1275 Pennsylvania Avenue, N.W., Suite 400
Washington, D.C. 20004
(202) 383-6416

PACIFIC X TELESIS
Group-Washington

February 18, 1997

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
Mail Stop 1170
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Dear Mr. Caton:

Re: CC Docket No. 96-45, Federal-State Joint Board on Universal Service, CCBPol 97-2,
Commission Staff Analysis of Forward-Looking Economic Cost Proxy Models

On behalf of Pacific Bell, please find enclosed an original and 6 copies of its "Comments on Commission Staff Analysis on the Use of Computer Models for Estimating Forward-Looking Economic Costs" in the above proceeding.

Please stamp and return the provided copy to confirm your receipt. Please contact me should you have any questions or require additional information concerning this matter.

Sincerely,



Enclosures

Certificate of Service

I, Ann D. Berkowitz, hereby certify that copies of the foregoing "GTE's Comments" have been mailed by first class United States mail, postage prepaid, on February 18, 1997 to all parties of record.

David Konuch*
Federal Communications Commission
1919 M Street, NW
Room 518
Washington, DC 20554

Richard Juhnke
Sprint Corporation
1850 M Street, NW
Suite 1100
Washington, DC 20036

Robert B. McKenna
U S West, Inc.
1020 19th Street, NW
Suite 700
Washington, DC 20036

James L. Wurtz
Pacific Telesis Group
1275 Pennsylvania Avenue, NW
Washington, DC 20004


Ann D. Berkowitz

*Hand Delivery

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEB 18 1997

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of

Federal-State Joint Board on
Universal Service

Commission Staff Analysis of Forward-Looking
Economic Cost Proxy Models

CC Docket No. 96-45

CCBPol 97-2

PACIFIC BELL'S COMMENTS ON
COMMISSION STAFF ANALYSIS ON
THE USE OF COMPUTER MODELS FOR ESTIMATING
FORWARD-LOOKING ECONOMIC COSTS

MARLIN D. ARD
SARAH R. THOMAS

140 New Montgomery Street
Room 1522A
San Francisco, California 94105
(415) 542-7649

MARGARET E. GARBER

1275 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
(202) 383-6472

Its Attorneys

Date: February 18, 1997

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of

Federal-State Joint Board on
Universal Service

Commission Staff Analysis of Forward-Looking
Economic Cost Proxy Models

CC Docket No. 96-45

CCBPol 97-2

PACIFIC BELL'S COMMENTS ON
COMMISSION STAFF ANALYSIS ON
THE USE OF COMPUTER MODELS FOR ESTIMATING
FORWARD-LOOKING ECONOMIC COSTS

I. **SUMMARY**

We appreciate the time and effort the staff put into its analysis of proxy models, and agree in many aspects with the staff's observations. However, we make the following points about 1) the staff's analysis, 2) the Hatfield and Benchmark Cost Proxy Models, and 3) the appropriateness of models for setting unbundled network element and access prices:

- Proxy models are an excellent means of disaggregating the universal service fund into small units tailored to small geographic areas.
- Proxy models should not be used, however, to size the universal service fund. In sizing the fund, parties should be allowed to rely on their current, actual costs, and should also receive compensation for their legacy costs. Because these actual and embedded cost amounts already exist, they do not need to be "modeled" in order to size the universal service fund.

- Proxy models should not be used to set unbundled network element or access

prices:

- ◊ Cost studies already exist, or can be performed, to calculate prices.
- ◊ At most, prices will be disaggregated into a small number of zones; a proxy model is not necessary for this simple geographic disaggregation.
- ◊ The proxy models do not contain adequate data to set prices for access and unbundled elements.
- ◊ If proxy models are used for pricing, and they set the prices wrong, they will affect a company's entire revenue stream. In the universal service context, by contrast, if the proxy models are wrong, they will only misstate a portion of the carrier's revenue -- the subsidy -- without affecting a carrier's revenue from its customer.
- ◊ Proxy models should not be used to validate cost studies. Cost studies are by far more accurate to a particular LEC's operation. To use the less accurate models to validate more precise cost studies gets things backward.

- From what we know of Hatfield (both versions 2.2.2 and 3),¹ the model suffers

from several defects:

- ◊ Hatfield does not produce results for small geographic units such as Census Blocks.

¹ We comment on Hatfield 2.2.2 here because we have only recently been provided a copy of version 3 of Hatfield.

- ◊ Hatfield assumes erroneously that a new network will be deployed all at once -- in a "Big Bang" -- rather than in prudent steps.
- ◊ Hatfield assumes an incorrect level of outside plant sharing.
- ◊ Hatfield erroneously calculates operating expenses.
- Finally, we believe one way of verifying switch information in either model would be for the Commission to issue data requests to switch vendors, and we urge the Commission to consider this option.

II. INTRODUCTION

Pacific Bell hereby comments on the Commission staff's analysis of proxy models released on January 9, 1997.² We support the use of proxy models for one purpose: to *disaggregate* the universal service fund into small amounts targeted to small geographic units. We do not support the use of forward-looking proxy models to *size* the universal service fund, because such models do not compensate us for our current, actual costs or our legacy costs. We likewise do not support the use of such models to price access or unbundled network elements.

It makes sense to use proxy models to disaggregate the universal service fund. Because there are no cost studies that can estimate the cost differences of serving households in small geographic units around the country, one needs a model to illustrate these cost differences and accurately target subsidies. Models are useful *only when actual information is unavailable*.

Actual information *is* available for access and unbundled network elements pricing. And there is no need to estimate cost differences among small geographic units -- the chief task proxy

² "The Use of Computer Models for Estimating Forward-Looking Economic Costs: A Staff Analysis," CCBPol 97-2, DA 97-56 (rel. Jan. 9, 1997).

models accomplish. Rather, access and unbundling pricing will be based on a small number of geographic zones within a study area, or, at most, zones within each wire center. Because individual LECs have or can perform cost studies using actual cost information to set such prices, using a proxy model for pricing is an unnecessary exercise.

Despite all of these reservations, we are designing a new model based on the Benchmark Cost Proxy Model ("BCPM") that will demonstrate that the Hatfield model's pricing outputs are completely unreasonable. We will present this model at our earliest convenience, but definitely in ample time for the Commission's decision in this proceeding.

We now turn to our specific comments.

III. PROXY MODELS SHOULD NOT BE USED FOR PRICING

Proxy models should not be used to price access services or unbundled elements. In the context of universal service, we have advocated use of a proxy model in order to disaggregate loop costs down to very specific geographic areas in order to estimate costs of service. We have done this because no cost studies exist with the granularity necessary to estimate wide variations in loop prices across great numbers of small geographic units.

We disagree, however, with the claim that proxy models "may be used for multiple regulatory objectives, such as . . . access reform, determining levels of universal service support in high cost areas, and the pricing of unbundled network elements." ¶ 11. Proxy models such as Hatfield do not reliably measure LECs' actual costs or reasonably estimate future costs. While someday there may be a proxy cost model developed which can reliably estimate the actual costs of each of the individual activities of each LEC, none today are that sophisticated. At best, proxy models will only estimate aggregate, average costs on a nationwide basis. These costs likely will not be correct for any specific LEC, much less for a LEC's individual services.

As Dr. Richard Emmerson stated in a declaration which accompanied our recent *Access Reform* filing,³ “[w]hen estimating costs for pricing purposes, the economically preferred method is to reflect as closely as possible the actual choices faced by engineers in placing relevant facilities.”⁴ Detailed cost studies, specific to each LEC, must be the basis of pricing decisions, not a proxy model designed to broadly estimate costs of serving particular geographic units.

Thus, for the following reasons, proxy models should not be used to price access services or unbundled elements:

- Cost studies are being performed all over the country to determine the cost of unbundled network elements and access. Indeed, the California Public Utilities Commission (“CPUC”) has completed a review of our TSLRIC cost study, and is currently evaluating additional cost studies.
- There is no reason for the same level of geographic deaveraging of access and unbundled elements that is required for universal service. While the Commission proposes universal service deaveraging down to the Census Block Group, proposed access charge or network element deaveraging requires far less geographic specificity.
- The existing proxy models do not have the data inputs necessary to determine the cost of access or network elements with any degree of accuracy.

³ Comments of Pacific Telesis Group, *Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, Usage of the Public Switched Network by Information Service and Internet Access Providers*, CC Docket Nos. 96-262, 94-1, 91-213 & 96-263 (filed Jan. 29, 1997), Affidavit of Richard D. Emmerson (affidavit attached hereto as Attachment A) (“*Emmerson Access Reform*”).

⁴ *Emmerson Access Reform*, at 25.

- While proxy models may be appropriate to set the amount of a *subsidy* payment (which, when combined with customer revenue from a service, makes up the total compensation a carrier will receive for that service), they should not be used to determine the *price* (the *total amount of compensation*) available to a LEC for the provision of its service. Errors in calculating total compensation will severely hit a LEC's bottom line.

- Proxy models should not be used to verify cost studies, which are by far the more accurate assessment of costs.

We expand on each of these points below.

A. Cost Studies Are Already Available To Price Access and Unbundled Elements

Proxy models should not be used as a substitute for individual companies' specific cost studies. For example, the cost studies reviewed by the CPUC utilize company-specific facilities information and actual usage information -- service mix, local calling patterns, communities of interest, holding times, distances, routes -- not available or used as inputs to any of the proposed universal service models. To substitute the specificity of existing cost studies with the projections of proxy models is to turn the search for accuracy on its head.

B. There Is No Need To Disaggregate Access or Unbundled Network Element Prices To Small Geographic Units

There is no regulatory need for the fine level of geographic deaveraging proxy models are capable of accomplishing to price access or unbundled network elements. In the universal service context, on the other hand, such detail is necessary: The cost of residential basic exchange service varies enormously from geography to geography.⁵ Pacific has found, for example, that the costs within

⁵ *Id.* at 23.

a single wire center (Chico, California) vary from a low of \$24 to a high of \$128 per customer per month. Actual cost information at that level of detail is not available. Proxy models were proposed to estimate the cost variations that occur among high cost areas in order to avoid awarding too great a subsidy in one area and too little subsidy in another area.

No one has proposed pricing access or unbundled elements by these small geographic units. The smallest geographic units currently proposed are a handful of zones. Even if pricing is driven down to the wire center, cost studies are adequate to disaggregate costs to this level.

C. The Existing Models Do Not Contain Adequate Data for Pricing

The data inputs of the models do not accurately determine the cost of access and a large number of the unbundled network elements. The proxy models contain vast amounts of geographic data. The costs of providing basic residential service vary in a manner reasonably related to the density, distance, terrain and other characteristics from which relationships can be drawn, data can be assembled and predictions can be made in proxy models.

This is not the case for access services. While estimates of the cost of residential basic exchange service depend upon the geographic distribution of customers, access services, for example, vary in cost according to the volume of traffic, service mix, calling patterns, communities of interest, and other cost drivers associated with the facilities. While the cost of the facilities may be predicted by looking at geographic data, the degree of sharing of the facility with other access services can only be arrived at through guesses. The cost of a minute of access or transport depends critically on the aggregation of traffic that is sent over that terrain and what portion of traffic is considered access. Indeed, the dependency on the volume of usage is so strong that it overwhelms the effect of

geographic influences.”⁶ Under the foregoing conditions, one must have volume data at the level of each switch.

However, the volume data necessary to price access cannot be reasonably approximated by a proxy model. Such data can -- and should -- accurately be measured, collected and used in a company-specific cost study.

D. Models Should Only Be Used To Estimate A Subsidy, Not Total Compensation

In the context of universal service, proxy models are being used to estimate the amount of *subsidy* due a LEC in serving a particular high cost area.⁷ However, this subsidy is not the total compensation the carrier will receive -- the total will be a combination of the *subsidy and the revenue* from the customer. Thus, if the subsidy amount is wrong, the error affects only a portion of the carrier’s compensation. And if the subsidy is inadequate in an area, the LEC may seek an increase in the subsidy or in its rates.

In *pricing*, on the other hand, if the model estimate is wrong -- as it is likely to be when pricing access or unbundled network elements for the reasons we describe above -- the error affects the total compensation due the LEC -- the price. Total compensation should not be calculated based on a proxy model’s estimate when complete, area-specific, company-specific, facility-specific cost studies are already available.

E. Models Should Not Be Used to Validate the Results of LECs’ Cost Studies

Given all of the flaws of using proxy models for pricing, using models to validate cost studies (§ 2) would be akin to using Cliff’s Notes to verify the true meaning of a passage of

⁶ *Id.* at 24.

⁷ *Id.*

Shakespeare. Cost studies contain far more actual, current data on a LEC-by-LEC and service-by-service basis than do proxy models. Taking the average results produced by proxy models and using them to verify the specific, actual results produced by cost studies would be misguided in the extreme.

Moreover, after extensive analysis, the CPUC approved our unbundled network element cost studies in its California unbundling proceeding.⁸ The CPUC stated that “our own *extensive analysis* of the studies -- conducted by our staff over a period of *four months* -- *convinces us* that Pacific’s studies adequately conform to the TSLRIC principles we have adopted and can, therefore, be used as a basis for setting prices.”⁹ The Commission should not require us to reinvent the wheel when we have already produced cost studies that pass regulatory muster.

With these key objections on the table, we turn to the specific questions raised by the staff analysis.

IV. CRITERIA FOR EVALUATING PROXY MODELS (¶¶ 8-16)

A. Proxy Models Should Not Be Judged Based on Whether They Create Incentives For New Entrants to Operate Profitably

We do not agree with the staff that proxy models “should not include sunk or historically incurred costs.” ¶ 9. The staff’s chief rationale for this position -- that new competitors should be encouraged “to efficiently enter the market” -- ignores the equally important principle of compensating carriers that have long complied with regulatory mandates. Starting with the premise

⁸ *Re Rulemaking on the [California Public Utilities] Commission’s Own Motion to Govern Open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks*, Decision 96-08-021, *mimeo* Aug. 2, 1996, 1996 Cal. PUC Lexis 841 (quoted excerpts attached hereto as Attachment B).

⁹ *Id.* at 15 (emphasis added).

that the chief goal is new entry without examining the economic havoc this stance will wreak on existing providers simply repeats the error of the *Interconnection* order.

We agree, on the other hand, with some of the staff's other criteria for evaluating models. For example, we believe it would be appropriate that the Commission facilitate "independent evaluation" of the models (§ 15) by issuing data requests seeking switch cost information from individual vendors and treating the information under the Commission's confidentiality rules. We have had difficulty obtaining switch pricing information; data requests would help solve the problem of understandable vendor resistance to releasing proprietary information.

Likewise, we agree that models should be "sufficiently flexible to permit a user to vary model inputs." § 16. Here, our BCPM is hands down the winner, while Hatfield offers the user only limited flexibility. We discuss these issues in more detail below.

V. MODEL STRUCTURE AND INPUT REQUIREMENTS (§§ 17-73)

A. Underlying Model Structure (§§ 17-30)

1. We Support the Existing Wire Center Approach (§§ 18-21)

We agree with the staff's conclusion that existing wire center layout should be used in models. § 18. Therefore, we are puzzled by the staff's observation that "models do not need to assume a switch must necessarily be placed in each of the incumbent LEC's current wire centers." § 20. For the foreseeable future, this is how switches will be situated; therefore, it is not "forward-looking" to assume these switches away.

2. The BCPM's Geographic Unit of Analysis is Finer Than, and Thus Far Superior To, the Hatfield Approach (§§ 22-24)

One of the key distinctions between the BCPM and Hatfield is that the BCPM is capable of disaggregating cost to the Census Block Group level (and may eventually disaggregate to